SECTION C
Projectile Follower System
SPECIFICATIONS

C.1 SCOPE: These specifications set forth the Governments minimum requirements for a High Speed Projectile Follower System. The Projectile Follower System will be used for Optics Division high-speed digital imaging of Army materiel test.

C.2 CONFIGURATION: The Projectile Follower shall be turn-key, configured of standard commercial off the shelf catalog advertised items, brand name or equal to the DRS Flight Follower or IMC/Photosonics Trajectory Tracker, and shall meet or exceed all of the following specifications.

C.3 CAPABILITY: The Projectile Follower shall be a rugged field deployable assembly capable of use in low desert terrain environments.

C.4 SPECIFICATIONS:

C.4.1 Mirror assembly:

C.4.1.1 Shall have minimum tracking range of 100 degrees, 90 degrees stable and usable for image data.

C.4.1.2 Shall have angular accuracy of less than 0.5 degrees.

C.4.1.3 The Projectile Follower shall use high quality, front surface, 1/20 wave mirrors.

C.4.1.4 The Projectile Follower shall be calibrated in less than three minutes after software changes. Acceleration profiles shall calibrate in less than 45 minutes.

C.4.1.5 Shall, as a minimum, be able to track kinetic tank rounds in excess of 1800 meters per second at an intercept distance of less than 40 meters.

C.4.1.6 Shall have tracking encoder data available for real time electronic output and also saved to a Microsoft Excel spreadsheet for data analysis.

C.4.2 Communications remote interface features:

The Projectile Follower shall have the ability to transfer control data via the Gigabit Ethernet connection. The Projectile Follower will use static IP (user defined) addressing and operate on common use networks with other instrumentation. An external LED shall indicate com status.

C.4.3 Control Features and Indicators:

C.4.3.1 Shall have indicators for standby/power, and faults.

C.4.3.2 Shall be at minimum Microsoft Windows 2000 and XP compatible.

C.4.4 Communications:

C.4.4.1 Shall have a minimum of a 1000/100 – base T Ethernet (category 5E RJ 45 connections) link for control, configuration, data previewing, data download and to connect a network of Projectile Followers and other networked cameras/instrumentation.

C.4.4.2 Shall operate over Ethernet wire a minimum of 300 feet of Cat 5E, and 50 Km distance via external fiber network converter.

C.4.4.3 Shall operate using standard COTS 100 Mb/s network equipment, such as switches, routers, wireless links, etc., and coexisting with other IP instrumentation.

C.4.4.4 Shall have military type sealed connectors, rated at IP67 or better and tighten with no more than one full twist.

C.4.4.5 Shall provide chassis mounted BNC connectors for trigger input/output.

C.4.4.6 The software shall provide the ability to induce drag in tracking profile.

C.4.4.7 Shall be able to rearm in less than two seconds of triggering.

C.4.4.8 Shall be able to import and calibrate to acceleration profiles.

C.4.5 Camera mount:

C.4.5.1.1.1 Shall be 3/8 inch bolt hole for camera mounting.

C.4.6 Trigger:

C.4.6.1 Shall have + 5 VDC positive and a -5 VDC negative (or switch closure) trigger input, as well as software trigger.

C.4.6.2 Shall have a variable trigger input and trigger delay.

C.4.6.3 There shall be inputs for velocity measurement corrections.

C.4.9 Power requirements:

C.4.9.1 Shall operate on 120 VAC 60 Hz nominal power at less than 5 amperes.

C.4.9.2 An external LED shall indicate power status.

C.4.9.3 Shall initialize within one minute of application of power.

C.4.10 Physical and Environmental:

C.4.10.1 The minimum operating temperature range shall be 32°F to 122°F.

C.4.10.2 Projectile Follower size shall not exceed Dimensions: 4' (H) x 4' (L) x 2' (W).

C.4.10.3 Shall weigh less than 85 pounds.

C.4.10.4 Shall operate in light rainfall, water resistant case.

C.4.10.5 Shall have filtered cooling fans, thermally managed.

C.4.10.6 Shall have sealed cable pass through/panel.

C.4.11 Accessories:

C.4.11.1 Shall include all operating software, adapters and cables necessary for power and communications interface. The software will be a user friendly Windows GUI.

C.4.11.2 Shall include an operator manual, maintenance manuals with schematics and operator & component level repair training.

C.4.11.3 Shall include a protective shock and vibration resistant sealed shipping case with a minimum of two handles on each end.

C.4.11.4 Shall have a minimum warranty of two years. This will also require the vender to repair the system within five days after delivery and place in shipping for return. If repairs exceed five days, a loan system shall be delivered within ten days of delivered inoperable system.